

# Autonomous, Cryogenic Leak Detector for Improving Launch Site Operations, Phase I

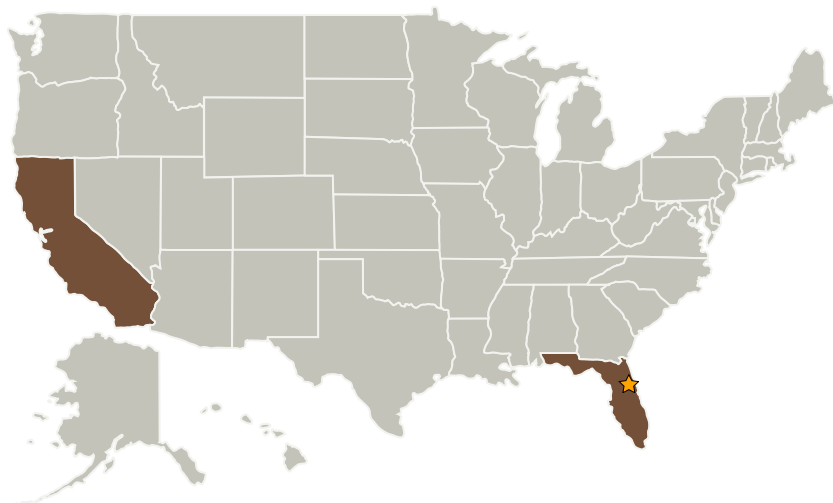
Completed Technology Project (2006 - 2006)



## Project Introduction

For detecting leakage of cryogenic fluids in spaceport facilities and in spacebound vehicles, this project proposes to demonstrate the feasibility of an all-optical sensor that can be fitted into narrow orifices around plumbing junctions. Fast response time and complete reversibility in the detection range of 1 ppm to 100% for hydrogen will be demonstrated in Phase I. This technology will support NASA goal of reducing vehicle and payload cost, and increase safety of ground and flight operations by measuring hydrogen in real-time and in situ. The sensor's thermal shock resistance when exposed to cryogenic fluids will also be tested in Phase I. A prototype device will be engineered, field-tested and delivered to NASA in Phase II. Successful discussions have been conducted with industrial partners for commercialization support including Phase III follow-on funding for this project. One major U.S. aerospace company has expressed strong interest in the proposed technology by providing a letter of support. A technical team having 70 years of cumulative experience in developing commercially viable products has been assembled for this project.

## Primary U.S. Work Locations and Key Partners



Autonomous, Cryogenic Leak Detector for Improving Launch Site Operations, Phase I

## Table of Contents

Project Introduction	1
Primary U.S. Work Locations and Key Partners	1
Organizational Responsibility	1
Project Management	2
Technology Areas	2

## Organizational Responsibility

### Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

### Lead Center / Facility:

Kennedy Space Center (KSC)

### Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

## Autonomous, Cryogenic Leak Detector for Improving Launch Site Operations, Phase I

Completed Technology Project (2006 - 2006)



Organizations Performing Work	Role	Type	Location
★ Kennedy Space Center(KSC)	Lead Organization	NASA Center	Kennedy Space Center, Florida
Innosense, LLC	Supporting Organization	Industry Minority-Owned Business, Small Disadvantaged Business (SDB), Women-Owned Small Business (WOSB)	Torrance, California

## Primary U.S. Work Locations

California	Florida
------------	---------

## Project Management

**Program Director:**

Jason L Kessler

**Program Manager:**

Carlos Torrez

## Technology Areas

**Primary:**

- TX14 Thermal Management Systems
  - └ TX14.1 Cryogenic Systems
    - └ TX14.1.2 Launch Vehicle Propellant